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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/577,818	11/27/2006	Gary Wayne Waterford	HAC-046	2803
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EXAMINER				
MILLER, DANIEL H				
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1794				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/577,818

Applicant(s)

WATERFORD, GARY WAYNE

Examiner

DANIEL MILLER

Art Unit

1794

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 August 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4-12, 14-16, 19-25 and 27-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4-12, 14-16, 19-25 and 27-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 8/31/2009

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 4-8, 10-12, 14-16, 19-21, 23-25, and 27-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Prevost (US 6,723,412) in view of Ishikawa (US 5,601,886).
3. Prevost teaches a synthetic turf comprising a flexible backing member and parallel rows of synthetic ribbons projecting upwards from the backing member (see claim 1 reference).
4. The backing layer can be a single, double or triple layer of permeable fabric (see claims 5-7 ref.). The ribbons (or fibers) can be made from polyethylene or polypropylene ribbons one quarter to one inch in width that are attached to the backing by tufting (see column 5 lines 35-50). The second or third layer with tuft ribbons are considered to meet applicant's claimed drainage layer and the first backing layer with artificial turf ribbons projecting from it meet applicant's claims to a water permeable synthetic turf. No patentable distinction between the claimed structure and the art of record is seen.
5. The fibers have a particulate infill between the fibers (see claim 1 and 25 ref.).

6. Prevost further teaches it is known in the art to provide a sealed layer under the flexible backing layer that is provided with holes in order to allow for drainage (see columns 1-2) and designs the turf to have wide rows to help further improve drainage (column 3).
7. The second backing (drainage layer) having tuft fibers is tuft to the first backing, providing applicant's claimed attachment means.
8. The backing can be a fabric that one of ordinary skill would expect is inherently uniformly porous because of the woven pattern of the fabric and the pores are capable of being measured on the micro range and therefore microporous as claimed. No patentable distinction is seen.
9. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the loop system of pile elements as the yarn element of applicant's drainage layer in order to provide the benefit of added support as taught by Ishikawa which would be advantageous since the drainage layer is below and supporting the artificial turf layer.
10. It would also been obvious to provide a means of attaching the turf to the underlayer in order to provide for ease of installation providing a continuous piece as in Prevost.
11. Further, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide micropores in the sealed resin layer of Ishikawa in order to provide for the desired drainage and water permeability of Prevost (see above).

12. It would also be obvious to provide uniformity of pores in the backing layer for uniform drainage of water from the turf and one of ordinary skill would expect to obtain the claimed properties of the turf layer and drainage layer particularly with respect to permeability by optimizing the efficiency in managing water content of the artificial turf and drainage dependent upon particular applications and uses of the field and sub soil or aggregate conditions that the turf was installed on top of. No patentable distinction is seen.

13. It would even further have been obvious to one of ordinary skill in the art at the time of the invention to provide the gauge of fiber claimed given the disclosed range of lengths and deniers of fibers disclosed by Ishikawa and Prevost (disclosing 1/4th inch above) optimized for the intended use of the artificial turf; for instance, it is well known in the art that different sports require different field conditions (i.e. golf, football, soccer), wherein the fiber length, width, gauge and other qualities can be manipulated to form an ideal surface for a variety of applications. No patentable distinction is seen.

14. Applicant has added the claim limitations requiring that, "adjacent, parallel rows of loop pile tufts of said drainage layer allow lateral drainage of water which drains from said synthetic turf layer, and further provide support and lateral stability to the synthetic turf layer disposed there above" to the instant claim 1. One of ordinary skill would expect that the structure of the loop pile elements of Ishikawa would provide for drainage since they are pulled through unsealed holes of the various layers, with substantially similar structure to that claimed, or it would be otherwise obvious to provide drainage laterally or otherwise (as claimed) in order to provide the permeability

or drainage required by the cited references. Further the fibers are considered to provide support to some degree and lateral stability to some degree to the synthetic turf layer above as claimed given the structural similarities. No patentable distinction is seen.

15. It is noted that applicant has not claimed any particular level or otherwise quantified the support or stability or drainage level provided by the loop pile elements.

16. Claims 1, 4-8, 10-12, 14-16, 19-21, 23-25, and 27-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Squires (US 2002/0132099) in view of Ishikawa (US 5,601,886).

17. Squires teaches a synthetic turf comprising a flexible backing member and parallel rows of synthetic ribbons projecting upwards from the backing member (see figures).

18. The backing layer can be a plurality of layers and is constructed to pass fluid to drainage mechanism (see abstract). The fibers can be loop fibers having a particulate infill between the fibers that can be sand and/or rubber (see [0029]).

19. The ribbons (or fibers) can be made from polyethylene or polypropylene ribbons one quarter to one inch in width that are attached to the backing by tufting (see column 5 lines 35-50).

20. For convenience of installation, the moisture barrier layer (104), the drainage layer (106) and the filtering layer 108 may be combined into a single unit, (i.e., a continuous composite drain (CCD) 114), that may be easily rolled out onto the base 102 during installation [0032]. The artificial turf mat 110 and the grass blades 112 may also be combined into a single unit, an artificial turf 116, for easy installation of the pre-engineered artificial turf system 100 [0032]. Those of ordinary skill in the art of artificial turf systems will appreciate that various combinations of the different turf layers may be used to accommodate different procedural techniques that may be desired for different installation reasons, e.g., for different environmental factors such as hard or soft soil, etc [0032]. In addition, different types of material may be used for each of the layers in the pre-engineered artificial turf system (100) [see 0032]. In [0033] FIG. 2, there is a cross sectional block diagram of a portion of another exemplary embodiment of a pre-engineered synthetic turf field (200). Although the field 200 is very similar to the field 100, a drainage layer 206 is illustrated that is a composite such as plastic that is extruded into long fibers that are gathered to form a continuous support in the field 200. For example, the plastic of the drainage layer (206) is shaped like bedsprings [0033]. The drainage layer 206 may provide a softer field 200 than the field (100) and would be preferred if the field (200) is known to be used when certain activities that are conducive to a softer feeling are performed thereon [0033]. Of course, other variations of the field (200) are contemplated and the drainage layer 206 could be modified to address the needs of the other field types [0033]. It is to be understood that the drainage layer (206) may be constructed to offer the option of either a firm or flexible field 200 [0033].

21. The backing can include a woven fabric (see 0009 referred to as a filter layer and considered to be a backing) that one of ordinary skill would expect is inherently uniformly porous because of the woven pattern of the fabric. Further, the pores are capable of being measured on the micro range and therefore microporous as claimed. No patentable distinction is seen.

22. Squires is silent as to artificial turf having loop pile elements.

23. Ishikawa teaches a loop ribbon structure (or cut loop ribbon structures, see column 2) used for an artificial turf simulating grass having two separate length. The first length selected from appropriate values including an exemplary embodiments with 15mm lengths and then other loop filaments elements selected to be 20 to 80% of the height (length) of the first upright artificial grass filaments (see figures and column 2 lines 40-60); overlapping applicant's claimed ranges. The pile elements are implanted into a cloth backing member and then sealed with a resin layer on the back side (see column 1). The loop shaped fibers are proffered wherein more support force is needed (see column 2 lines 10-15) and can be formed from polyethylene or polypropylene (see column 4 lines 30-35). The fibers can be provided in a variety of deniers (gauges) that overlap and/or render the claimed gauge obvious (see column 2 lines 20-40).

24. Regarding claim 16, It would also been obvious to one of ordinary skill in the art at the time of the invention to provide a means of attaching the turf to the underlayer because squires teaches various combinations of the different turf layers may be used to accommodate different procedural techniques that may be desired for different

installation reasons, e.g., for different environmental factors such as hard or soft soil, etc [0032, Squires].

25. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the loop pile system of as the yarn element of applicant's drainage layer in order to provide long fibers gathered to provide continuous support (as discussed by Squires above) the loop fibers having the added benefit of providing better support (as taught by Ishikawa above), which would be advantageous since the drainage layer is below and supporting the artificial turf layer. Further, it would have been obvious to provide micropores in the sealed resin layer of Ishikawa in order to provide for the desired drainage of Squires. It would also be obvious to provide uniformity of pores in the backing layer for uniform drainage; further one of ordinary skill would expect to obtain the claimed permeability of the turf layer and drainage layer in order to provide maximum efficiency in managing water content of the artificial turf and drainage dependent upon particular applications and uses of the field and sub soil or aggregate conditions that the turf was installed on top of.

26. It would even further have been obvious to one of ordinary skill in the art at the time of the invention to provide the gauge of fiber claimed given the disclosed range of lengths and deniers of fibers disclosed by Ishikawa optimized for the intended use of the artificial turf; for instance, it is well known in the art that different sports require different field types conditions (i.e. golf, football, soccer), wherein the fiber length, width, gauge and other qualities can be manipulated to form an ideal surface for a variety of applications. No patentable distinction is seen.

27. Applicant has added the claim limitations requiring that, "adjacent, parallel rows of loop pile tufts of said drainage layer allow lateral drainage of water which drains from said synthetic turf layer, and further provide support and lateral stability to the synthetic turf layer disposed there above" to the instant claim 1. One of ordinary skill would expect that the structure of the loop pile elements of Ishikawa would provide for drainage since they are pulled through unsealed holes of the various layers, with substantially similar structure to that claimed, or it would be otherwise obvious to provide drainage laterally or otherwise (as claimed) in order to provide the permeability or drainage required by the cited references. Further the fibers are considered to provide support to some degree and lateral stability to some degree to the synthetic turf layer above as claimed given the structural similarities. No patentable distinction is seen.

28. It is noted that applicant has not claimed any particular level or otherwise quantified the support or stability or drainage level provided by the loop pile elements.

29. Claims 1, 4-8, 10-12, 14-16, 19-21, 23-25, and 27-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burk (US 6,472,041) in view of Prevost (US 6,723,412) further in view of Ishikawa.

30. **Burk (US 6,472,041)** teaches a surfacing system having a top layer and a bottom layer, said system comprising: (a) a bottom layer including a pile fabric having a

flexible backing and a plurality of upstanding pile elements, said pile elements each having an upper and a lower end; (b) a quantity of in-fill material which is sufficient to form a layer of substantially uniform density extending from the flexible backing of the bottom layer to substantially the upper end of the pile elements when it is interspersed amongst the pile elements; (c) a top layer comprising a wear coating having an upper and a lower surface; and (d) a binder which binds the bottom layer, the in-fill layer and the top layer together to create a monolithic structure (or are attached); wherein the wear coating is applied on top of the in-fill material so that the upper ends of at least some of the pile elements contact and are bound to the lower surface of the wear coating, and wherein the pile elements reinforce the system and anchor the top layer to the bottom layer.

31. Burk is silent as to a top artificial turf element with grass like ribbon or pile elements.

32. **Prevost** teaches a synthetic turf comprising a flexible backing member and parallel rows of synthetic ribbons projecting upwards from the backing member (see claim 1 reference).

33. The backing layer can be a single, double or triple layer of permeable fabric (see claims 5-7 ref.). The ribbons (or fibers) can be made from polyethylene or polypropylene ribbons one quarter inch to one inch in width that are attached to the backing by tufting (see column 5 lines 35-50). The fibers of Prevost have a particulate infill between the fibers (see claim 1 and 25 ref.).

34. Prevost further teaches it is known in the art to provide a sealed layer under the flexible backing layer that is provided with holes in order to allow for drainage (see columns 1-2) and designs the turf to have wide rows to help further improve drainage (column 3).

35. Burk and Prevost are silent as to loop pile elements.

36. **Ishikawa** teaches an artificial turf (see figures) having a loop ribbon structure used for simulating grass having two separate lengths. The first length selected from appropriate values including an exemplary embodiment with 15mm lengths and then other loop filaments elements selected to be 20 to 80% of the height (length) of the first upright artificial grass filaments (see figures and column 2 lines 40-60); overlapping applicant's claimed height ranges. The pile elements are implanted into a cloth backing member and then sealed with a resin layer on the back side (see column 1). The loop shaped fibers are preferred wherein more support force is needed (see column 2 lines 10-15) and can be formed from polyethylene or polypropylene (see column 4 lines 30-35). The fibers can be provided in a variety of deniers (gauges) that overlap and/or render the claimed gauge obvious (see column 2 lines 20-40).

37. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the loop pile system of as the yarn element of applicant's drainage layer (the underlayer of Burk) in order to provide long fibers gathered to provide continuous support; the loop fibers having the added benefit of providing better support (as taught by Ishikawa above), which would be advantageous since the support layer of Burk is underneath the top surface (of the artificial turf layer).

38. Further, it would have been obvious to provide micropores in the sealed resin layer of Ishikawa and optimize the water permeability of the backing layers in order to provide for the desired drainage and permeability of Prevost (which discloses such systems as known in the art); providing uniformity (as in Prevost see figures) and the claimed size of pores in the backing layer for drainage would further be obvious because one of ordinary skill would expect to obtain the claimed properties n providing optimal draining of the turf that maximizes efficiency in managing water content of the artificial turf (drainage) dependent upon particular applications and uses of the field and sub soil or aggregate conditions base that the turf was installed on top of.

39. It would even further have been obvious to one of ordinary skill in the art at the time of the invention to provide the gauge of fiber claimed given the disclosed range of lengths and deniers and thickness of fibers disclosed by Ishikawa and Prevost (Prevost teaching one fourth inch thickness) optimized for the intended use of the artificial turf; for instance, it is well known in the art that different sports require different field types conditions (i.e. golf, football, soccer), wherein the fiber length, width, gauge and other qualities can be manipulated to form an ideal surface for a variety of applications. No patentable distinction is seen.

40. Applicant has added the claim limitations requiring that, "adjacent, parallel rows of loop pile tufts of said drainage layer allow lateral drainage of water which drains from said synthetic turf layer, and further provide support and lateral stability to the synthetic turf layer disposed there above" to the instant claim 1. One of ordinary skill would expect that the structure of the loop pile elements of Ishikawa would provide for

drainage since they are pulled through unsealed holes of the various layers, with substantially similar structure to that claimed, or it would be otherwise obvious to provide drainage laterally or otherwise (as claimed) in order to provide the permeability or drainage required by the cited references. Further the fibers are considered to provide support to some degree and lateral stability to some degree to the synthetic turf layer above as claimed given the structural similarities. No patentable distinction is seen.

41. It is noted that applicant has not claimed any particular level or otherwise quantified the support or stability or drainage level provided by the loop pile elements.

42. Claims 9 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Squires (US 2002/0132099) in view of Ishikawa (US 5,601,886) further in view of Squires (US 6,299,959).

43. The base references do not teach a latex layer.

44. Regarding claims 9 and 22, Squires (US 6,299,959) teaches an artificial turf (see figures) with a backing member having a with tuft fibers wherein the backing is sprayed with a resilient latex on the bottom side in order to seal the lock the fibers into the backing (column 2 lines 1-10).

It would have been obvious to one of ordinary skill in the art at the time of the invention to provide a latex material as the sealing layer on the back side of the turf backing as

disclosed by Squires '959 in order to adhere and fix the fibers of the invention to the backing layer for greater stability. No patentable distinction is seen.

45. Claims 9 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Prevost (US 6,723,412) in view of Ishikawa (US 5,601,886) further in view of Squires (US 6,299,959).

46. The base references do not teach a latex layer.

47. Regarding claims 9 and 22, Squires (US 6,299,959) teaches an artificial turf (see figures) with a backing member having a with tuft fibers wherein the backing is sprayed with a resilient latex on the bottom side in order to seal the lock the fibers into the backing (column 2 lines 1-10).

It would have been obvious to one of ordinary skill in the art at the time of the invention to provide a latex material as the sealing layer on the back side of the turf backing as disclosed by Squires '959 in order to adhere and fix the fibers of the invention to the backing layer for greater stability. No patentable distinction is seen.

48. Claims 9 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burk (US 6,472,041) in view of Prevost (US 6,723,412) further in view of Ishikawa and still further in view of Squires (US 6,299,959).

49. The base references do not teach a latex layer.

50. Regarding claims 9 and 22, Squires (US 6,299,959) teaches an artificial turf (see figures) with a backing member having a with tuft fibers wherein the backing is sprayed with a resilient latex on the bottom side in order to seal the lock the fibers into the backing (column 2 lines 1-10).

It would have been obvious to one of ordinary skill in the art at the time of the invention to provide a latex material as the sealing layer on the back side of the turf backing as disclosed by Squires '959 in order to adhere and fix the fibers of the invention to the backing layer for greater stability. No patentable distinction is seen.

Response to Arguments

51. Applicant's arguments filed 8/4/2009 have been fully considered but they are not persuasive.

52. The 102 rejections have been withdrawn due to amendments by applicant. Further rejections over claims 16 and 26 have been withdrawn due to cancellation of the claims.

53. Applicant has added the claim limitations requiring that, "adjacent, parallel rows of loop pile tufts of said drainage layer allow lateral drainage of water which drains from said synthetic turf layer, and further provide support and lateral stability to the synthetic turf layer disposed there above" to the instant claim 1. Applicant has argued that these limitations are not taught, suggested or rendered obvious by the above references.

54. The Examiner has concluded that one of ordinary skill would expect that the structure of the loop pile elements of Ishikawa would provide for drainage since they are pulled through unsealed holes of the various layers, with substantially similar structure to that claimed, or it would be otherwise obvious to provide drainage laterally or otherwise (as claimed) in order to provide the permeability or drainage required by the cited references above. Further the fibers are considered to provide support to some degree and lateral stability to some degree to the synthetic turf layer above as claimed given the structural similarities. No patentable distinction is seen.

55. It is noted that applicant has not claimed any particular level or otherwise quantified the support or stability or drainage level provided by the loop pile elements.

56. Rejections maintained.

Conclusion

57. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DANIEL MILLER whose telephone number is (571)272-1534. The examiner can normally be reached on M-Th.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Sample can be reached on (571)272-1376. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/David R. Sample/
Supervisory Patent Examiner, Art Unit 1794

/Daniel Miller/
Examiner, Art Unit 1794